

REMARKS

This communication is submitted in response to the Office Action dated June 28, 2004.

Claims 1-32 are pending in the subject application with claims 1-24, 26 and 29 being currently amended and claims 30-32 being newly presented. Claims 25, 27 and 28 have not been changed relative to their immediate prior version.

Support for the amended and new claims is found throughout the specification as originally filed such that the amended and new claims do not introduce any new matter.

The specification has been amended for consistency with the claims. The amendments to the specification involve the incorporation of alternative language to describe features clearly disclosed in the subject application as originally filed and the amendments to the specification do not introduce any new matter.

Reconsideration of the subject application is courteously requested in view of the foregoing amendments and the following remarks.

The rejection of claims 1-12 under 35 U.S.C. §102(b) as being anticipated by Heimsoth et al, the rejection of claims 13-16, 18-24 and 26-29 as being unpatentable over Heimsoth et al in view of Kurose, and the rejection of claim 25 as being unpatentable over Heimsoth et al in view of Kurose and further in view of Merrill are respectfully traversed for the following reasons.

Initially, it is pointed out that claims 17, 19 and 20 were objected to by the Examiner as being dependent upon a rejected base claim and were indicated as being allowable if rewritten in independent form to include all the limitations of the base claim

and any intervening claims. However, claims 19 and 20 are also among the claims listed by the Examiner as being unpatentable over Heimsoth et al in view of Kurose. Claims 19 and 20 depend from claim 17, which stands objected to and not rejected on the basis of prior art. Accordingly, the inclusion of claims 19 and 20 among the rejected claims is considered to be an oversight on the part of the Examiner. Since claim 17 has been amended to be rewritten in independent form to include all of the limitations of the base claim, there being no intervening claims, independent claim 17 should now be allowable and dependent claims 19 and 20 should be allowable with claim 17.

Independent claim 1 relates to a method of maintaining a seawall installed in use between a body of water and retained earth and recites "forming a passage through the installed seawall to extend downwardly at an acute angle from a water facing side of the seawall to an earth facing side of the seawall; inserting a longitudinally extending shaft of an anchoring member through the passage from the water facing side of the seawall and into the retained earth on the earth facing side of the seawall, with the shaft carrying an anchor of the anchoring member; advancing the anchoring member into the retained earth while an end of the shaft extends from the passage along the water facing side of the seawall, said advancing including contacting the retained earth with the anchoring member such that the anchoring member penetrates the retained earth and the portion of the anchoring member extending into the retained earth from the earth facing side of the seawall is embedded in the earth; anchoring the anchor of the anchoring member in the retained earth at a distance spaced from the earth facing side of the seawall with the end of the shaft extending from the passage along the water facing side of the seawall; and securing a retaining member on the end of the shaft,

said securing including tensioning the anchoring member between the anchor and the retaining member and compressing the seawall and the retained earth between the anchor and the retaining member to resist displacement of the seawall due to pressure of the retained earth against the earth facing side thereof." Heimsoth et al discloses a method of installing an anchor member through a retaining wall involving grouting the anchor member in the retained earth. The method disclosed by Heimsoth et al involves drilling a hole through the retaining wall 1 and then inserting a borehole pipe 17 through the hole and into the retained earth 5. An anchor member 12 is then inserted into the borehole pipe 17 until it reaches a desired position or, alternatively, the anchor member 12 can be disposed within the borehole pipe 17 as the borehole pipe 17 is inserted through the hole and into the earth 5. In either case, the anchor member 12 does not and cannot contact the earth 5 as it is advanced and, therefore, does not penetrate the earth or become embedded in the earth. Once the anchor member 12 is inserted through the retaining wall into a desired position, the borehole pipe 17 is withdrawn and, simultaneously, the space vacated by the borehole pipe around the anchor member 12 is filled with grout. Insertion of the anchor member 12 via the passage of the borehole pipe 17 is an essential feature of Heimsoth et al in that the borehole pipe 17 is critically necessary in order to create a space of sufficient size around the anchor member 12 for the grout which serves to anchor the anchor member 12 in the earth 5. The borehole pipe 17 is continuously withdrawn and the space vacated by the borehole pipe around the anchor member 12 is continuously grouted until the grout reaches the sealing disc 22, thusly forming a grouted member 31 in the earth 5. Only after the grouted member 31 is formed is a support member or crosshead 19 placed on the end of anchor

member 12 that extends from the water facing side of wall 1. The only purpose of the support member 19 is to extend into the hole 28 formed in wall 1 to accommodate the borehole pipe, and grout 32 is injected through the support member 19 to grout it in place. Heimsoth et al discloses that an anchor nut 23 may be screwed onto the end of the anchor member 12. However, Heimsoth et al explicitly states that the anchor nut 23 is not necessary to the method (column 2, line 31), presumably since the support member 19 is grouted in place. Heimsoth et al discloses the anchor member 12 as having a claw arrangement 20 at its bottom end and, as is apparent from Fig. 2, the claw arrangement 20 is also grouted in place due to the grout injected into the space vacated by the borehole pipe.

Heimsoth et al does not teach or suggest the advancing step recited in claim 1 involving contacting the retained earth with the anchoring member such that the anchoring member penetrates the retained earth and the portion of the anchoring member extending into the retained earth from the earth facing side of the seawall is embedded in the earth. Rather, the anchor member 12 of Heimsoth et al is advanced into the lumen of the borehole pipe 17 previously inserted in the retained earth 5 or, alternatively, is disposed within the borehole pipe 17 as the borehole pipe is inserted. In either case, there is no contact between the anchor member 12 and the retained earth 5 and there is no penetration of the retained earth by the anchor member. Moreover, since grout 31 is injected around the anchor member 12 as the borehole pipe 17 is withdrawn, the portion of the anchor member 12 extending from the earth facing side of wall 1 is not embedded in the earth 5 but, on the contrary, is embedded in the grout 31. The securing step recited in claim 1 involving tensioning the anchoring

member between the anchor and the retaining member and compressing the seawall and the retained earth between the anchor and the retaining member is also not disclosed or suggested by Heimsoth et al. The support member 19 of Heimsoth et al is placed on the anchor member 12 only after it has been grouted, and its purpose is merely to fill the hole in retaining wall 1 along the water facing side thereof. There is no disclosure whatsoever by Heimsoth et al of the support member 19 being secured on the anchor member 12, with or without the anchor nut 23, in a manner involving tensioning the anchor member 12 between the claw arrangement 20 and the support member 19 or compressing the seawall 1 and the earth 5 between the claw arrangement 20 and the support member 19. Indeed, there is no earth, but only grout, between the claw arrangement 20 and the wall 1, such that the earth 5 cannot be compressed between the claw arrangement 20 and the support member 19. As seen in Fig. 3, the ability of the support member 19 to apply compression against wall 1 is also limited due to abutment of the support member 19 with the sealing disc 22. In addition, there is clearly seen a gap or space between the anchor nut 23 and the support member 19 which is contradictory to the anchor nut 23 applying force against the support member 19 to tension anchor member 12 and to compress the wall 1 and earth 5 as characterized in claim 1. In Heimsoth et al, the anchor member 12 is grouted in place before the support member 19 is applied, and maintaining the strength and integrity of the grout would lead one away from subsequently applying tension. The method disclosed by Heimsoth et al involving a grouted anchor member and the method claimed in claim 1 involving a tensioned earth-embedded anchoring member with compression of the retained earth between an anchor of the anchoring member

and a retaining member secured on the anchoring member are governed by distinctly different engineering principles as well as contrasting structural and functional dynamics and forces. The steps recited in claim 1 are not disclosed by Heimsoth et al, explicitly or impliedly, and independent claim 1 cannot be anticipated by Heimsoth et al. Given the essence of Heimsoth et al it is merely to use a weighted grouted mass to resist displacement of wall 1, the method claimed in claim 1 cannot be considered obvious over Heimsoth et al except with the use of impermissible hindsight made possible with the teachings of the present invention itself. Accordingly, independent claim 1 is submitted to be clearly patentable over Heimsoth et al and should be allowed along with dependent claims 2-11 and 30-32.

Claim 4 recites the step of advancing as including “rotating the shaft into the retained earth”, and there is no disclosure by Heimsoth et al of a shaft of the anchor member 12 being rotated into the retained earth. Regardless of whether the anchor member 12 is inserted through the borehole pipe 17 after it has been driven into earth 5 or is disposed within the borehole pipe 17 as it is driven into the earth 5, in Heimsoth et al it is the borehole pipe 17 and not the anchor member 12 that would be rotated into the earth 5. Accordingly, claim 4 is submitted to be clearly patentable over Heimsoth et al for the additional limitation recited therein as well as being allowable with independent claim 1.

With respect to dependent claim 5, which recites “embedding a helical formation of the anchor in the retained earth”, it is noted that Heimsoth et al fails to disclose the claw arrangement 20 as either having a helical formation or as being embedded in the earth 5. In practice, the method described by Heimsoth et al can only result in the claw

arrangement 20 being embedded in the grout 31. Accordingly, claim 5 is submitted to be clearly patentable over Heimsoth et al for the additional limitation recited therein as well as being allowable with independent claim 1.

Dependent claim 6 recites "advancing the anchoring member into the retained earth with the anchor in a collapsed position and said anchoring includes moving the anchor to an expanded position resisting withdrawal of the anchoring member from the retained earth." There are no teachings or suggestions whatsoever by Heimsoth et al of the claw arrangement 20 having a collapsed position and being moved to an expanded position. The steps recited in claim 6 can only be found in Heimsoth et al by impermissibly expanding the teachings of Heimsoth et al beyond the reasonable metes and bounds of its disclosure. Accordingly, claim 6 is submitted to be clearly patentable over Heimsoth et al for the additional limitations recited therein as well as being allowable with independent claim 1.

Dependent claim 7 recites "said threadedly engaging including engaging the securing member on the shaft at a longitudinal position along the shaft to apply compressive force against the retaining member which is transmitted to the wall 1". As pointed out above, Fig. 3 of Heimsoth et al clearly illustrates a distinguishable gap or space between the anchor nut 23 and the support member 19 such that the anchor nut 23 does not and cannot apply compressive force against the support member 19 which is transmitted to the wall 1. Dependent claim 7 is thusly submitted to be clearly patentable over Heimsoth et al for the additional limitations recited therein as well as being allowable with independent claim 1.

Dependent claim 8 recites "said threadedly engaging includes tensioning the

anchoring member between the anchor and the retaining member.” The gap depicted in Fig. 3 of Heimsoth et al between the anchor nut 23 and the support member 19 precludes any conclusion or inference that Heimsoth et al contemplated tensioning the anchor member 12 between the claw arrangement 20 and the support member 19. Accordingly, claim 8 is submitted to be clearly patentable over Heimsoth et al for the addition limitations recited therein as well as being allowable with independent claim 1.

Dependent claim 10 recites “inserting an insert between the retaining member and the water facing side of the seawall and securing the retaining member on the end of the shaft with the insert interposed between the retaining member and the water facing side of the seawall to apply compressive force from the retaining member against the water facing side of the seawall.” Aside from the fact that Heimsoth et al fails to disclose the support member 19 applying compressive force against the retaining wall 1, there are no teachings or suggestions whatsoever by Heimsoth et al of an insert between the support member 19 and the water facing side of wall 1. In Heimsoth et al, no structure which can be considered an insert can be found inserted between the water facing side of wall 1 and the support member 19. Accordingly, dependent claim 10 is considered to be clearly patentable over Heimsoth et al for the additional limitations recited therein as well as being allowable with independent claim 1.

Dependent claim 11 recites “periodically inspecting the seawall and periodically adjusting the retaining member along the shaft to adjust the tension and compression”. Heimsoth et al fails to disclose or suggest the steps of periodically inspecting and adjusting as recited in claim 11 and, indeed, the structure disclosed by Heimsoth et al constrains the ability to perform periodic adjustments. As explained above, Heimsoth et

al does not even contemplate tensioning the anchor member 12 and compressing the wall 1 and retained earth 5 between the claw arrangement 20 and the support member 19. In addition, no explicit teachings can be found in Heimsoth et al which evidence a contemplation to periodically adjust the support member 19 along the shaft of the anchor member 12 for any reason much less to adjust tension and compression. Notably, the support member 19 cannot be adjusted along the shaft of anchor member 12 due to abutment of the support member 19 with the sealing disc 22 and also due to the rigidity of the grout securing the support member in place, thereby making it impossible to perform the steps recited in claim 11. The method disclosed by Heimsoth et al does not result in a dynamic system conducive to period adjustments; and, accordingly, claim 11 is submitted to be clearly patentable over Heimsoth et al for the additional limitations recited therein as well as being allowable with claim 1.

Dependent claim 31 recites “said forming is performed on a seawall that has become displaced from a previous desired position for the seawall and said securing includes moving the seawall back toward the previous desired position.” Dependent claim 32 recites “said forming, said advancing, said anchoring and said securing are performed for a sufficient number of anchoring members on a seawall that has become displaced from a previous desired position for the seawall, such that the seawall is moved back to the previous desired position.” The method disclosed by Heimsoth et al does not involve any positive movement of wall 1 back toward a previous desired position for the wall 1 regardless of the number of anchor members 12 that may be installed. Moreover, Heimsoth et al fails to provide any structure by which the wall 1 can be moved back toward a previous desired position. Accordingly, dependent claims

31 and 32 are submitted to be clearly patentable over Heimsoth et al for the additional limitations recited therein as well as being allowable with independent claim 1.

Independent claim 12 recites "installing a first anchoring member to extend through the installed seawall and into the retained earth, said installing including installing the first anchoring member from a water facing side of the seawall at a first location and tensioning the first anchoring member to compress the seawall against the retained earth; installing a second anchoring member to extend through the seawall and into the retained earth, said installing a second anchoring member including installing the second anchoring member from the water facing side of the seawall at a second location spaced from the first location and tensioning the second anchoring member to compress the seawall against the retained earth; and subsequent to installing the first and second anchoring members, rigidly interconnecting the first and second anchoring members to maintain a separation distance between the first and second anchoring members." Claim 12 stands rejected as being anticipated by Heimsoth et al; however, no structure whatsoever is disclosed or suggested by Heimsoth et al by which first and second installed anchor members 12 can be rigidly interconnected to maintain a separation distance between the anchor members. The rejection of claim 12 as being anticipated by Heimsoth et al is clearly improper and claim 12 is submitted to be clearly patentable over Heimsoth et al along with dependent claims 13-16 and 18.

Claims 13-16, 18-24 and 26-29 stand rejected as being unpatentable over Heimsoth et al in view of Kurose. As explained above, the rejection of claims 19 and 20 is submitted to be improper since claims 19 and 20 depend from claim 17 which was indicated as being allowable if rewritten in independent form. The rejection of claims

13-16, 18, 21-24 and 26-29 as being unpatentable over Heimsoth et al in view of Kurose is also submitted to be improper since Kurose fails to rectify the deficiencies of Heimsoth et al with respect to the latter claims as well as with respect to claims 1-12.

Kurose does not even relate to a method of maintaining a seawall installed in use between a body of water and retained earth. On the contrary, Kurose relates to the fabrication and installation of a new retaining wall. Another critical distinction between the retaining wall 1 installation disclosed by Kurose and the method claimed in the subject application is that installation of the retaining wall of Kurose requires excavation of earth since it must be placed against a sloping earth surface, and this makes the teachings of Kurose totally impractical and inapplicable for an existing seawall installation. The retaining wall disclosed by Kurose comprises a plurality of structural members 1 put together to form a grid-shaped structure. Each structural member 1 includes an elongate core 2 and an elongate body 3 secured to core 2. Opposite end portions 2a of the core 2 are joined by connecting means 5 to form a planar grid-shaped wall structure against the sloping surface of ground 12a. The structural members 1 and connecting means 5 are put together by welding and the resulting grid-shaped wall structure is necessarily very rigid. The entire grid-shaped wall structure is fabricated and placed against the sloping surface of ground 12a before the anchor bolts 8 are passed through holes 7 in plates 6 of the connecting means 5 and into the earth. Anchor heads 10 are screwed onto ends of anchor bolts 8. This is in contrast to the method claimed in claim 13 which requires, by virtue of its dependency from claim 12, that first and second anchoring members first be installed through a seawall and into the retained earth and that the installed first and second anchoring members be

thereafter rigidly interconnected. Furthermore, although Kurose discloses that anchor heads 10 are screwed onto ends of the anchor bolts 8, there are no teachings or suggestions whatsoever by Kurose of the anchor bolts 8 being tensioned to compress the wall structure against the earth as is required by claim 13 due to its dependency from claim 12. In Kurose, the anchor bolts 8 are installed through holes 7 in the wall structure, and the rigid planar configuration of the wall structure limits the ability to tension the anchor bolts 8 and compress the wall structure against the earth 12. Even if the anchor bolts 8 can be considered tensioned via the anchor heads 10, although no support for this proposition is provided in the disclosure, the anchor heads 10 are still not applied until after the anchor bolts 8 are interconnected via the connecting means 5. Claim 13 calls for "rigidly interconnecting the first and second retaining members "after installation of the anchoring members and in Kurose the anchor heads 10, identified by the Examiner as corresponding to the recited retaining members, are not rigidly interconnected much less rigidly interconnected after the anchor bolts 8 are tensioned. Kurose also does not recognize or contemplate maintaining a separation distance between already installed anchoring members in that the separation distance between the anchor bolts 8 of Kurose is determined by the location of the holes in the rigid grid-shaped wall structure. The only way that claims 13-16, 18, 21-24 and 26-29, as well as claims 1-12 for that matter, can be considered obvious over Heimsoth et al in view of Kurose is by improperly expanding the scope of the two references to perform piecemeal reconstruction relying on impermissible hindsight made possible only from the teachings of the subject application. Accordingly, dependent claim 13 is submitted

to be clearly patentable over Heimsoth et al in view of Kurose for the additional limitations recited therein as well as being allowable with independent claim 12.

Dependent claim 14 recites “said securing a first retaining member includes tensioning the first anchoring member between the first retaining member and the anchor of the first anchoring member and compressing the seawall and the retained earth between the first retaining member and the anchor of the first anchoring member and said securing a second retaining member includes tensioning the second anchoring member between the second retaining member and the anchor of the second anchoring member and compressing the seawall and the retained earth between the second retaining member and the anchor of the second anchoring member”. As discussed above, Heimsoth et al does not teach or suggest that securement of the support member 19 on the anchor member 12 involves tensioning the anchoring member between the claw arrangement 20 and the support member 19. In addition, in Heimsoth et al there is no earth but only grout between the claw arrangement 20 and the retaining wall 1 such that the wall and retained earth cannot be compressed between the claw arrangement and the support member 19. In the retaining wall of Kurose, the anchor bolts 8 are not even inserted in the earth until after the rigid grid-shaped wall structure is fabricated, and there are no teachings or suggestions whatsoever by Kurose of the anchor heads 10 being used to tension the anchor bolts 8. Indeed, the rigidity of the grid-shaped wall structure is not conducive to compressing the wall structure and the earth via the anchor heads 10 because the plates 6 through which the anchor bolts 8 are inserted are already rigidly interconnected before the anchor heads are applied. Kurose fails to provide any teachings or suggestions which

can be used to modify the method disclosed by Heimsoth et al to render obvious the claimed invention, except with the use of impermissible hindsight and with improper expansion of what the references teach. It is submitted, therefore, that dependent claim 14 is clearly patentable over Heimsoth et al in view of Kurose for the additional limitations recited therein as well as being allowable with independent claim 12.

Dependent claim 15 recites “said rigidly interconnecting includes connecting a first end of a connecting member to the first retaining member and connecting a second end of the connecting member to the second retaining member with the connecting member having a fixed length between the first and second retaining members such that the size of the separation distance maintained between the first and second anchoring members is non-variable once the connecting member has been connected to the first and second retaining members”. An essential feature of Kurose is that the grid-shaped wall structure is pre-fabricated and then the anchor bolts 8 are inserted through the wall structure. This prevents the connecting means 5, which is part of the pre-fabricated wall structure, from being connected to first and second retaining members secured respectively on first and second anchor bolts which are already inserted in the earth, and in fact no structure is disclosed by Kurose rigidly interconnecting the anchor heads 10. No teachings or suggestions can be fairly found in Kurose which would support modifying Heimsoth et al to obtain the limitations recited in claim 15. Accordingly, dependent claim 15 is submitted to be clearly patentable over Heimsoth et al in view of Kurose for the additional features recited therein as well as being allowable with independent claim 12.

Dependent claim 16 recites “said rigidly interconnecting includes connecting a

first end of a connecting member to the first retaining member and connecting a second end of the connecting member to the second retaining member with the connecting member having a selectively adjustable length between the first and second retaining members such that the size of the separation distance maintained between the first and second anchoring members is selectively variable once the connecting member has been connected to the first and second retaining members.” Dependent claim 16 is submitted to be patentable over Heimsoth et al in view of Kurose for the same reasons discussed above in connection with claim 15 and, in addition, for the reason that Kurose fails to disclose any type of connecting member between first and second retaining members respectively secured on first and second anchor bolts where the length of the connecting member is selectively adjustable such that the size of the separation distance maintained between the first and second anchor bolts is selectively variable. In actuality, the rigid grid-shaped wall structure disclosed by Kurose necessarily establishes a fixed separation distance between any pair of anchor bolts 8 and Kurose fails to contemplate any type of connecting member which would allow a selectively variable separation distance to be maintained between two anchor bolts. Accordingly, claim 16 is submitted to be clearly patentable over Heimsoth et al in view of Kurose for the additional limitations recited therein as well as being allowable with independent claim 12.

Dependent claim 18 recites limitations relating to the installation and rigid interconnection of a third anchoring member to at least one of the first and second anchoring members. Claim 18 is submitted to be clearly patentable over Heimsoth et al in view of Kurose for the same reasons discussed above in connection with claim 12.

Independent claim 21 relates to an apparatus for maintaining a seawall installed in use between a body of water and retained earth and recites "a first anchoring device comprising a first anchoring member and a first retaining member, said first anchoring member comprising a longitudinally extending shaft and an anchor carried by said shaft ..., said first retaining member being securable on said end of said shaft at a selected location along the length of said shaft to establish tension in said first anchoring member between said anchor and said first retaining member and compression in the seawall and retained earth between said anchor and said first retaining member in an anchored position for said first anchoring member; a second anchoring device comprising a second anchoring member and a second retaining member, said second anchoring member comprising a longitudinally extending shaft and an anchor carried by said shaft ..., said second retaining member being securable on said end of said shaft of said second anchoring member at a selected location along the length of said shaft of said second anchoring member to establish tension in said second anchoring member between said anchor of said second anchoring member and said second retaining member and compression in the seawall and retained earth between said anchor of said second anchoring member and said second retaining member in an anchored position for said second anchoring member, said tension and compression established in said anchored position for said second anchoring member being independent of said tension and compression established in said anchored position for said first anchoring member; and a connecting member securable to said first and second retaining members while said first and second anchoring members are in said anchored position to maintain a separation distance between said first and second

anchoring members.” As explained above, neither Heimsoth et al nor Kurose disclose an anchoring device as recited in claim 21 in that neither reference discloses a retaining member securable on an end of a shaft of an anchoring member at a selected location along the length of the shaft to establish tension in the anchoring member between an anchor and the retaining member and compression in a seawall and retained earth between the anchor and the retaining member in an anchored position. In Heimsoth et al, the anchored position for the anchor member 12 is obtained by grouting, and there are no teachings or suggestions of the support member 19 being selectively securable along the anchor member 12 to establish tension and compression. Indeed, it is contrary to the fundamental principles of Heimsoth et al for the support member 19 to be used to establish tension and compression as discussed above. Also, no structure is disclosed by Heimsoth et al securable to first and second support members 19 to maintain a separation distance between first and second anchor members 12. Heimsoth et al fails to recognize any benefit to be derived from maintaining a separation distance between a pair of installed anchor members 12. In Kurose, the anchor bolts 8 are not used to maintain a seawall installed in use but, rather, are part of a new retaining wall installation. The rigidity of the grid-shaped wall structure through which the anchor bolts 8 of Kurose are inserted teaches away from the concept of establishing tension in the anchor bolts 8 and compression of the wall structure and retained earth, and no anchor structure is disclosed for the anchor bolts 8 by which such tension and compression may be accomplished. Furthermore, the rigid wall structure disclosed by Kurose makes it untenable to establish tension and compression for first and second anchor bolts 8 independent of one another. In addition, there are

no teachings or suggestions whatsoever by Kurose of a connecting member securable to first and second anchor heads 10 while the anchor bolts 8 thereof are already in their anchored positions. Accordingly, independent claim 21 is submitted to be clearly patentable over Heimsoth et al in view of Kurose and should be allowed along with dependent claims 22-29.

Dependent claim 22 calls for first and second securing members respectively threadedly securable on ends of the shafts of the first and second anchoring members to effect the tension and compression in the anchored positions for the first and second anchoring members. Heimsoth et al does not contemplate use of the anchor nut 23 to tension the anchor member 12 or to compress the seawall and retained earth between the claw arrangement 20 and the support 19. On the contrary, Heimsoth et al relies on grout to anchor the anchor member 12, and the use of grout teaches away from the concepts of the present invention as explained above. Kurose does not disclose any anchor structure by which tension and compression may be established via the anchor bolts 8 much less the establishment of tension and compression in first and second anchor bolts 8 which are independent of one another. Accordingly, dependent claim 22 is submitted to be clearly patentable over Heimsoth et al in view of Kurose for the additional limitations recited therein as well as being allowable with independent claim 21.

Dependent claim 23 recites "said connecting member includes a first end securable to said first retaining member, a second end securable to said second retaining member, and a fixed length between said first and second retaining members to maintain a separation distance of non-variable size." As pointed out above,

Heimsoth et al fails to teach or suggest a connecting member between a pair of installed anchor members 12 for any purpose, much less to maintain a separation distance between the anchor members. In Kurose, the connecting means 5 is not securable to first and second anchor heads 10 much less being securable to first and second anchor heads 10 while first and second anchor bolts 8 thereof are in an anchored position. No teachings or suggestions whatsoever are provided by Kurose which may be combined with Heimsoth et al to obtain the invention recited in claim 23. Accordingly, claim 23 is submitted to be clearly patentable over Heimsoth et al in view of Kurose for the additional limitations recited therein as well as being allowable with claim 21.

Dependent claim 24 recites the connecting member as having “an adjustable length between said first and second retaining members for selectively adjusting the size of the separation distance”. No connecting member structure is disclosed by Heimsoth et al. In Kurose, no connecting member structure is disclosed that is securable to the anchor heads 10 of first and second anchor bolts 8 while already in their anchored positions and which also has an adjustable length for selectively adjusting the size of the separation distance between the anchor bolts. The connecting means 5 of Kurose cannot have an adjustable length since identical length connecting means are necessary to establish the grid shape for the wall structure. Accordingly, Kurose fails to rectify the deficiencies of Heimsoth et al and leads away from the claimed invention such that claim 24 is clearly patentable over Heimsoth et al in view of Kurose for its additional structural limitations as well as being allowable with independent claim 21.

Dependent claim 25 recites “said connecting member comprises a turnbuckle”, and the Examiner relies on Merrill for the disclosure of a turnbuckle. As noted above in connection with claim 24, Kurose fails to contemplate and actually teaches away from any adjustability in the size of the separation distance between two anchor bolts 8. The essence of Kurose is that the anchor bolts 8 are inserted through a pre-fabricated grid-shaped wall structure and the rigid grid-shaped wall structure establishes a fixed location for the anchor bolts. One of ordinary skill in the art would not be motivated to substitute a turnbuckle as disclosed by Merrill for the connecting means 5 of Kurose since the essence of Kurose is a rigid grid-shaped wall structure where the squares of the grid are all of the same size. The only way it can be considered obvious to substitute a turnbuckle for the connecting means 5 of Kurose and then to apply these features to Heimsoth et al to obviate the claimed invention is by applying impermissible hindsight, ignoring essential features of the references, and supplying features not found in the references themselves. Accordingly, it is submitted that claim 25 is clearly patentable over Heimsoth et al in view of Kurose and further in view of Merrill for the additional limitations recited therein as well as being allowable with independent claim 21.

Claim 26 recites “a sleeve for receiving said shaft of said anchoring member of said at least one of said first and second anchoring devices therethrough and for extension through the seawall with an interference fit to remain in place in the seawall in said anchored position for said anchoring member.” In Heimsoth et al the borehole pipe 17 is removed and does not remain in place in the seawall in the anchored position for the anchor member 12. In Kurose, there are no teachings or suggestions

whatsoever of a sleeve for extension through a seawall installed in use, in that all of the features disclosed by Kurose are part of a new retaining wall installation in which the connecting means 5 form part of the new retaining wall. Accordingly, claim 26 is submitted to be clearly patentable over Heimsoth et al in view of Kurose for the additional features recited therein as well as being allowable with independent claim 21.

Dependent claim 27 recites “at least one of said first and second anchoring devices further comprises an insert for being interposed between said retaining member ... and the water facing side of the seawall.” Heimsoth et al fails to disclose an insert as explained above in connection with claim 10. Kurose also does not disclose any structure whatsoever corresponding to an insert insertable between the anchor heads 10 and a water facing side of the grid-shaped wall structure much less a water facing side of an existing seawall already installed in use between a body of water and retained earth. Accordingly, claim 27 is submitted to be clearly patentable over Heimsoth et al in view of Kurose for the additional feature recited therein as well as being allowable with claim 21.

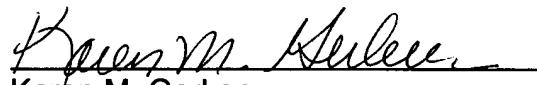
Dependent claim 28 recites the anchors as comprising “helical formations”, and it is not seen where in Heimsoth et al or Kurose the Examiner has found any anchor structure having helical formations. It is submitted, therefore, that claim 28 is clearly patentable for the additional limitation recited therein as well as being allowable with independent claim 21.

Dependent claim 29 recites the anchors as “movable between a collapsed position and an expanded position in which said anchors are anchored in the retained earth in said anchored positions”, and anchors having the collapsed/expanded features

recited in claim 29 can only be found in Heimsoth et al and/or Kurose with the use of impermissible hindsight and by supplying features not found in the references themselves. Accordingly, claim 29 is submitted to be clearly patentable over Heimsoth et al in view of Kurose for the additional structural limitations recited therein as well as being allowable with independent claim 21.

In light of the foregoing, all of the claims in the subject application are submitted to be in condition for allowance. Action in conformance therewith is courteously solicited. Should any issues in the subject application remain unresolved, the Examiner is encouraged to contact the undersigned attorney.

Respectfully submitted,



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